VETERINARY • PUBLIC • HEALTH • INSTITUTE

UNIVERSITÄT BERN

Basic Statistics with NCSS

Monday, October 20th 13:00-14:00 Kick-off session
Thursday, October 23rd and Monday, October 27th
13:00 – 17:00

Location:
Online course with Zoom meetings, exercises and ILIAS podcasts

Registration (deadline October 8th):
Basic Statistics with NCSS HS2025

Lecturers from VPH Institute, Vetsuisse Faculty, University of Bern

- For anyone who wants to formulate hypothesis, analyze and visualize data
- A 2-year personal student license of the user-friendly statistical software NCSS is included in the registration fee.
- Participants need a computer with **Windows**.
- Mac & Linux Users: Windows emulation required (extra costs, Windows license required, Remote Desktop possible; http://www.ncss.com/support/windows-on-a-mac)
- Course fees (including NCSS 2-year student license):
  - Individuals from the VPHI and the Swiss Federal Food Safety and Veterinary Office (BLV): free of charge
  - Students and researchers from the Vetsuisse Faculty (BE, ZH) and affiliated institutions: **CHF 50.-.**
  - External participants: **CHF 100.-.**

The number of participants is limited, and places will be allocated on a first come first served basis.

For students and researchers of the Unibe:
An **internal reference number (REF-XX-XXX)** is needed during the registration process.

For additional information on the course or registration process please contact Beat Thomann (beat.thomann@unibe.ch) or Jasmin Widmer (jasmin.widmer2@unibe.ch).

Course topics

Module 1 - Data import, data management

Learning objectives

- Data preparation in Excel or Text (ASCII, CSV formats), variable coding, missing values
- Types of data (continuous or numerical; categorical or binary data)
- Importing data (bases) into NCSS (**File** *open, import, save, export*)
- Data management, data merging, creating new variables, variable recoding and transformations in NCSS (**Data** *sort, recode, transform, recalc*)

Module 2 – Descriptive statistics, hypothesis testing and simple tests

Learning objectives

- Principles of hypothesis testing. Outcome variables and explanatory variables
- Identification of the correct statistical test, assumptions. Difference between independent and dependent observations
- Descriptive statistics: frequencies (2x2 contingency tables), histogram, means and variances, various graphs & box plots (**Analysis /** *descriptive statistics*)
- Tests for continuous outcomes (t-tests, Mann-Whitney U)
- Tests for binary outcomes (Chi2 tests, Mantel-Haenszel-test)

Module 3 – Analysis of continuous and binary outcomes

Learning objectives

- Comparison of means/medians between groups (**Analysis / ANOVA /** *One-way Analysis of Variance, Kruskal-Wallis test*)
- Correlation between continuous variables (**Analysis /** *Correlation / Correlation Matrix)*
- Linear Regression, Analysis of Residuals (**Analysis /** *Regression / Linear Regression*
- Analysis of binary outcomes (**Analysis /** Regression / *Logistic Regression)*

Module 4 – Analysis of dependent data (optional, depending on time and interest)

Learning objectives

- Experimental settings with repeated measures (**Analysis / ANOVA /** *Repeated-measures ANOVA*)
- Analysis of matched binary outcomes (**Analysis /** Regression / *Logistic Regression / Conditional Logistic Regression)*

Self-study hours required per course content:

Theorical Framework (PowerPoint Presentations)		**4 hours**
Podcasts (to watch before online sessions)	-	**1 hour**
Practical exercises (to do before online sessions)		**5 hours**

Scheduled Online meetings via MS Teams:

Kick-off session	**20.10.2025**	13:00-14:00 1 hour	Introduction to NCSS software; Break down of ILIAS course contents.
Session 1	**23.10.2025**	13:00-17:00 4 hours	Theoretical highlights and discussion of questions on theoretical lectured concepts; Questions and discussion of practical exercises.
Session 2	**27.10.2025**	13:00-17:00 4 hours	Theoretical highlights and discussion of questions on theoretical lectured concepts; Questions and discussion of practical exercises.